

CLAIMS

1. A pill dispenser comprising
a base formed to include a series of pill-receiving compartments and a
5 lock-out section interposed between a first and last in the series of pill-receiving
compartments,
a closure formed to include a compartment access opening and
mounted on the base for rotation relative to the base about an axis of rotation to align
the compartment access opening formed in the closure with one of the lock-out
10 section to block access to pills deposited in any of the pill-receiving compartments
and a selected one of the pill-receiving compartments to allow access to a pill
deposited in the selected one of the pill-receiving compartments, and
a rotation controller including a closure lock coupled to the closure to
rotate therewith, a series of motion-interrupting limiters appended to the base, and a
15 motion-blocking limiter appended to the base, each motion-interrupting limiter being
associated with one of the pill-receiving compartments and formed to include a
compartment-selector pocket sized to receive a lock tab portion of the closure lock
therein, the motion-blocking limiter being associated with the lock-out section and
formed to include a lock-out pocket sized to receive the lock tab portion of the closure
20 lock therein, and wherein the lock tab portion of the closure lock, during rotation of
the closure about the axis of rotation in a first rotary direction, is arranged to intercept
each motion-interrupting limiter associated with a pill-receiving compartment and
extend into the compartment-selector pocket formed therein to align the compartment
access opening formed in the closure with the pill-receiving compartment formed in
25 the base and associated with the motion-interrupting limiter receiving the lock tab
portion of the closure lock and is also arranged to intercept the motion-blocking
limiter associated with the lock-out section and extend into the lock-out pocket
formed therein to align the compartment access opening formed in the closure with
the lock-out section formed in the base to block access into the pill-receiving
30 compartments through the compartment access opening formed in the closure.

2. The pill dispenser of claim 1, wherein a first of the motion-interrupting limiters includes first and second inclined teeth arranged to lie in spaced-apart relation to one another to define therebetween the compartment-selector pocket formed in the first of the motion-interrupting limiters.

5 3. The pill dispenser of claim 2, wherein the base includes an annular wall surrounding the lock-out section and the pill-receiving compartments and a flange extending radially outwardly from the annular wall away from the pill-receiving compartments and the lock-out section and the first and second inclined teeth are appended to the flange and to the annular wall to lie at a junction
10 therebetween.

4. The pill dispenser of claim 3, wherein each of the inclined teeth includes a curved inner wall appended to an exterior surface of the annular wall and an inclined outer wall arranged to face away from the exterior surface and extend upwardly from the flange.

15 5. The pill dispenser of claim 3, wherein each of the inclined teeth includes a short end having a first length, a long end having a second length greater than the first length, an inner wall arranged to extend between the short and long ends and appended to an exterior surface of the annular wall, an inclined outer wall arranged to extend between the short and long ends in spaced-apart relation to the
20 inner wall and to cooperate with the short end to define an obtuse included angle therebetween and with the long end to define an acute included angle therebetween, and a bottom wall appended to the flange and arranged to lie between the inner wall, inclined outer wall, short end, and long end.

25 6. The pill dispenser of claim 3, wherein each of the inclined teeth includes an inner wall appended to an exterior surface of the annular wall, the first inclined tooth includes an outer wall sized to have a first length and arranged to face away from the exterior surface and engage the lock tab portion of the closure lock in camming relation during rotation of the closure relative to the base about the axis of rotation in the first rotary direction, and the second inclined tooth includes an outer
30 wall sized to have a second length that is less than the first length and arranged to face away from the exterior surface and engage the lock tab portion of the closure lock in

camming relation during rotation of the closure relative to the base about the axis of rotation in the first rotary direction.

7. The pill dispenser of claim 2, wherein the first inclined tooth includes an inclined outer wall arranged to have a first slope and to engage the lock tab portion of the closure lock in camming relation during rotation of the closure relative to the base about the axis of rotation in the first rotary direction and the second inclined tooth includes an inclined outer wall arranged to have a second slope different from the first slope and to engage the lock tab portion of the closure lock during further rotation of the closure relative to the base about the axis of rotation in the first rotary direction.

8. The pill dispenser of claim 7, wherein the second slope is greater than the first slope.

9. The pill dispenser of claim 7, wherein at least one of the first and second inclined teeth includes an end wall arranged to extend radially away from the base to provide anti-rotation means for intercepting the lock tab portion of the closure lock during rotation of the closure relative to the base about the axis of rotation in a second rotary direction opposite to the first rotary direction to block continued rotation of the closure relative to the base in the second rotary direction.

10. The pill dispenser of claim 2, wherein at least one of the first and second inclined teeth includes an end wall arranged to extend radially away from the base to provide anti-rotation means for intercepting the lock tab portion of the closure lock during rotation of the closure relative to the base about the axis of rotation in a second rotary direction opposite to the first rotary direction to block continued rotation of the closure relative to the base in the second rotary direction.

11. The pill dispenser of claim 10, wherein each of the first and second inclined teeth includes the anti-rotation means.

12. The pill dispenser of claim 10, wherein the anti-rotation means is located on the first inclined tooth and arranged to form a portion of a boundary wall defining the compartment-selector pocket between the first and second inclined teeth.

13. The pill dispenser of claim 10, wherein a second of the motion-interrupting limiters includes a first inclined tooth arranged to lie in spaced-apart relation to the first inclined tooth of the first of the motion-interrupting limiters to

locate the second inclined tooth therebetween and wherein the anti-rotation means is located on the second inclined tooth and arranged to face toward the first inclined tooth of the second of the motion-interrupting limiters.

14. The pill dispenser of claim 1, wherein the series of pill-
5 receiving compartments includes, in series, first, second, third, fourth, fifth, sixth, and seventh pill-receiving compartments, the series of motion-interrupting limiters includes a first motion-interrupting limiter adjacent to the seventh pill-receiving compartment, a second motion-interrupting limiter adjacent to the lock-out section, a
10 third motion-interrupting limiter adjacent to the first pill-receiving compartment, a fourth motion-interrupting limiter adjacent to the third pill-receiving compartment, a fifth motion-interrupting limiter adjacent to the fourth pill-receiving compartment, and a sixth motion-interrupting limiter adjacent to the fifth pill-receiving compartment.

15. The pill dispenser of claim 14, wherein the motion-blocking
15 limiter is adjacent to the second pill-receiving compartment.

16. The pill dispenser of claim 14, wherein the motion-blocking
limiter is adjacent to the sixth pill-receiving compartment.

17. The pill dispenser of claim 16, wherein the closure lock further
includes an auxiliary lock tab portion located on the closure in spaced-apart relation to
20 the lock tab portion, the rotation controller further includes an auxiliary motion-blocking limiter associated with the lock-out section and formed to include an auxiliary lock-out pocket sized to receive the auxiliary lock tab portion of the closure lock therein, the auxiliary motion-blocking limiter is arranged to lie adjacent to the
25 second pill-receiving compartment, the auxiliary lock tab portion of the closure lock, during rotation of the closure about the axis of rotation in the first rotary direction, is arranged to intercept the auxiliary motion-blocking limiter associated with the lock-out section and extend into the auxiliary lock-out pocket formed therein to align the
30 compartment access opening formed in the closure with the lock-out section formed in the base to block access into the pill-receiving compartments through the compartment access opening formed in the closure.

18. The pill dispenser of claim 1, wherein the motion-blocking limiter includes a ramp tooth and a lock-out tooth arranged to lie in spaced-apart relation to one another to define therebetween the lock-out pocket formed in the motion-blocking limiter.

5 19. The pill dispenser of claim 18, wherein the base includes an annular wall surrounding the lock-out section and the pill-receiving compartments and a flange extending radially outwardly from the annular wall away from the pill-receiving compartments and the lock-out section, the ramp tooth is appended to the flange and to the annular wall to lie at a junction therebetween, and the lock-out tooth
10 is appended to the flange and arranged to define a portion of a boundary wall defining the lock-out pocket and to lie in spaced-apart relation to the annular wall to provide a tab passage space therebetween sized to allow movement of the lock tab portion of the closure lock to pass therethrough during exit of the lock tab portion from the lock-out pocket.

15 20. The pill dispenser of claim 19, wherein the ramp tooth includes a curved inner wall appended to an exterior surface of the annular wall and an inclined outer wall arranged to face away from the exterior surface and extend upwardly from the flange.

20 21. The pill dispenser of claim 19, wherein the ramp tooth includes a short end having a first length, a long end having a second length greater than the first length, an inner wall arranged to extend between the short and long ends and appended to an exterior surface of the annular wall, an inclined outer wall arranged to extend between the short and long ends in spaced-apart relation to the inner wall and to cooperate with the short end to define an obtuse included angle therebetween and
25 with the long end to define an acute included angle therebetween, and a bottom wall appended to the flange and arranged to lie between the inner wall, inclined outer wall, short end, and long end.

30 22. The pill dispenser of claim 19, wherein the ramp tooth includes an inclined outer wall sloped to provide means for moving the lock tab portion of the closure lock away from the annular wall as the lock tab portion is rotated in the first rotary direction toward the lock-out tooth and about the axis of rotation and then depositing the lock tab portion in the lock-out pocket and the lock-out tooth provides

anti-rotation means for intercepting the lock tab portion of the closure lock normally during continued rotation of the lock tab portion in the first rotary direction to block continued rotation of the closure relative to the base in the first rotary direction.

23. The pill dispenser of claim 22, wherein the ramp tooth further
5 includes an end wall arranged to extend radially away from the base to provide anti-rotation means for intercepting the lock tab portion of the closure lock during rotation of the closure relative to the base about the axis of rotation in a second rotary direction opposite to the first rotary direction to block continued rotation of the closure relative to the base in the second rotary direction.

10 24. The pill dispenser of claim 18, wherein the ramp tooth includes an end wall arranged to extend radially away from the base to provide anti-rotation means for intercepting the lock tab portion of the closure lock during rotation of the closure relative to the base about the axis of rotation in a second rotary direction opposite to the first rotary direction to block continued rotation of the closure relative
15 to the base in the second rotary direction.

25. The pill dispenser of claim 18, wherein the closure lock further includes release means on the cover for moving the lock tab portion to disengage the lock-out tooth when the lock tab portion is located in the lock-out pocket formed in the motion-blocking limiter so that the lock tab portion is free to pass through a tab
20 passage space formed in the base and located adjacent to the lock-out tooth to exit the lock-out pocket in response to rotation of the cover in a first rotary direction about the axis of rotation and away from the ramp tooth.

26. The pill dispenser of claim 25, wherein the cover includes a top wall and a rim depending from a perimeter of the top wall, the rim is formed to
25 include a cutaway gap, the lock tab portion extends downwardly from the perimeter of the top wall and lies in registry with the cutaway gap, the releasing means includes a tab mover located in the cutaway gap and coupled to the top wall and to the lock tab portion to place the lock tab portion between the axis of rotation and the tab mover, and wherein the tab mover is hinged to the top wall to be moved relative to the rim
30 and toward the axis of rotation to move the lock tab portion to disengage the lock-out tooth and align with the tab passage space.

27. The pill dispenser of claim 1, wherein the closure lock further includes release means on the cover for moving the lock tab portion in the lock-out pocket toward the axis of rotation to face and be aligned with an opening into a lock tab passage formed in the motion-blocking limiter so that the lock tab portion is free to pass into and through the lock tab passage to exit the lock-out pocket in response to rotation of the cover about the axis of rotation in the first rotary direction.

28. The pill dispenser of claim 27, wherein the cover includes a top wall and a rim depending from a perimeter of the top wall, the rim is formed to include a cutaway gap, the lock tab portion extends downwardly from the perimeter of the top wall and lies in registry with the cutaway gap, the releasing means includes a tab mover located in the cutaway gap and coupled to the top wall and to the lock tab portion to place the lock tab portion between the axis of rotation and the tab mover, and wherein the tab mover is hinged to the top wall to be moved relative to the rim and toward the axis of rotation to move the lock tab portion to align with the tab passage space.

29. The pill dispenser of claim 1, wherein the closure includes a cover arranged to overlie the pill-receiving compartments and the lock-out section and formed to include the compartment access opening and a first cover retainer including a first retainer leg and a first retainer flange, the first retainer leg is cantilevered to an underside of the cover and arranged to extend downwardly and generally along the axis of rotation through a central retainer aperture formed in the base and surrounded by the pill-receiving compartments and the lock-out section, and the first retainer flange is appended to a free end of the retainer leg and arranged to extend laterally away from the retainer leg to engage a retention flange provided on a bottom portion of the base.

30. The pill dispenser of claim 29, wherein the closure further includes a second cover retainer arranged to cooperate with the first cover retainer to establish the axis of rotation extending through the central retainer aperture and to mount the cover on the base for rotation about the axis of rotation and wherein the second cover retainer includes a second retainer leg and a second retainer flange, the first retainer leg is cantilevered to an underside of the cover and arranged to extend downwardly in splayed relation to the first retainer leg and generally along the axis of

rotation through the central retainer aperture, and the second retainer flange is appended to a free end of the second retainer leg and arranged to extend laterally away from the second retainer leg to engage the retention flange provided on the bottom portion of the base.

5 31. A pill dispenser comprising
 a base formed to include a series of pill-receiving compartments and a lock-out section interposed between a first and last in the series of pill-receiving compartments,

 a closure formed to include a compartment access opening and
10 mounted on the base for rotation relative to the base about an axis of rotation to align the compartment access opening formed in the closure with one of the lock-out section to block access to pills deposited in any of the pill-receiving compartments and a selected one of the pill-receiving compartments to allow access to a pill deposited in the selected one of the pill-receiving compartments, and

15 a rotation controller including a lock tab coupled to the closure to rotate therewith and a lock tab retainer associated with the lockout section, and wherein the lock tab retainer is appended to the base and configured to receive the lock tab in a lock-out pocket provided by the lock tab retainer during rotation of the closure about the axis of rotation in a first rotary direction upon alignment of the
20 compartment access opening formed in the closure with the lock-out section to block further rotation of the closure in the first rotary direction and to block access into the pill-receiving compartments through the compartment access opening formed in the closure.

 32. The pill dispenser of claim 31, wherein the series of pill-receiving compartments includes, in series, first, second, third, fourth, fifth, sixth, and
25 seventh pill-receiving compartments and the lock tab retainer is adjacent to one of the second and sixth pill-receiving compartments.

 33. The pill dispenser of claim 31, wherein the closure lock further includes an auxiliary lock tab portion located on the closure in spaced-apart relation to
30 the lock tab portion, the rotation controller further includes an auxiliary lock tab retainer associated with the lock-out section, the auxiliary lock tab retainer is appended to the base to lie in spaced-apart relation to the lock tab retainer and

configured to receive one of the lock tab and auxiliary lock tab in an auxiliary lock-out pocket provided by the auxiliary lock tab retainer during rotation of the closure about the axis of rotation in the first rotary direction, the auxiliary lock tab retainer is arranged to lie adjacent to the second pill-receiving compartment to intercept the
5 auxiliary motion-blocking limiter associated with the lock-out section and extend into the auxiliary lock-out pocket formed therein upon alignment of the compartment access opening formed in the closure with the lock-out section formed in the base to block further rotation of the closure in the first rotary direction and to block access
10 into the pill-receiving compartments through the compartment access opening formed in the closure.

34. The pill dispenser of claim 33, wherein the series of pill-receiving compartments includes, in series, first, second, third, fourth, fifth, sixth, and seventh pill-receiving compartments, the lock tab retainer is adjacent to the sixth pill-receiving compartment, and the auxiliary lock tab retainer is adjacent to the second
15 pill-receiving compartment.

35. The pill dispenser of claim 34, wherein the rotation controller further includes release means on the cover for moving the lock tab in the lock-out pocket toward the axis of rotation to face and be aligned with an opening into a lock tab passage defined by the base and the lock tab receiver so that the lock tab is free to
20 pass into and through the lock tab passage to exit the lock-out pocket in response to rotation of the cover about the axis of rotation in the first rotary direction and for moving the auxiliary lock tab in the auxiliary lock-out pocket toward the axis of rotation to face and be aligned with an opening into an auxiliary lock tab passage defined by the base and the auxiliary lock tab receiver so that the auxiliary lock tab is
25 free to pass into and through the auxiliary lock tab passage to exit the auxiliary lock-out pocket in response to rotation of the cover about the axis of rotation in the first rotary direction.

36. The pill dispenser of claim 31, wherein the lock tab retainer includes a ramp tooth and a lock-out tooth arranged to lie in spaced-apart relation to
30 one another to define therebetween the lock-out pocket provided by the lock tab retainer.

37. The pill dispenser of claim 36, wherein the base includes an annular wall surrounding the lock-out section and the pill-receiving compartments and a flange extending radially outwardly from the annular wall away from the pill-receiving compartments and the lock-out section, the ramp tooth is appended to the flange and to the annular wall to lie at a junction therebetween, and the lock-out tooth is appended to the flange and arranged to define a portion of a boundary wall defining the lock-out pocket and to lie in spaced-apart relation to the annular wall to provide a tab passage space therebetween sized to allow movement of the lock tab of the closure lock to pass therethrough during exit of the lock tab from the lock-out pocket.

38. The pill dispenser of claim 37, wherein the ramp tooth includes an inclined outer wall sloped to provide means for moving the lock tab away from the annular wall as the lock tab is rotated in the first rotary direction toward the lock-out tooth and about the axis of rotation and then depositing the lock tab in the lock-out pocket and the lock-out tooth provides anti-rotation means for intercepting the lock tab normally during continued rotation of the lock tab in the first rotary direction to block continued rotation of the closure relative to the base in the first rotary direction.

39. The pill dispenser of claim 36, wherein the ramp tooth includes an end wall arranged to extend radially away from the base to provide anti-rotation means for intercepting the lock tab during rotation of the closure relative to the base about the axis of rotation in a second rotary direction opposite to the first rotary direction to block continued rotation of the closure relative to the base in the second rotary direction.

40. The pill dispenser of claim 36, wherein the rotation controller further includes release means on the cover for moving the lock tab to disengage the lock-out tooth when the lock tab is located in the lock-out pocket so that the lock tab is free to pass through a tab passage space formed in the base and located adjacent to the lock-out tooth to exit the lock-out pocket in response to rotation of the cover in a first rotary direction about the axis of rotation and away from the ramp tooth.

41. The pill dispenser of claim 40, wherein the cover includes a top wall and a rim depending from a perimeter of the top wall, the rim is formed to include a cutaway gap, the lock tab extends downwardly from the perimeter of the top wall and lies in registry with the cutaway gap, the releasing means includes a tab

mover located in the cutaway gap and coupled to the top wall and to the lock tab to place the lock tab between the axis of rotation and the tab mover, and wherein the tab mover is hinged to the top wall to be moved relative to the rim and toward the axis of rotation to move the lock tab to disengage the lock-out tooth and align with the tab passage space.

42. The pill dispenser of claim 31, wherein the closure lock further includes release means on the cover for moving the lock tab in the lock-out pocket toward the axis of rotation to face and be aligned with an opening into a lock tab passage defined by the base and the lock tab retainer so that the lock tab portion is free to pass into and through the lock tab passage to exit the lock-out pocket in response to rotation of the cover about the axis of rotation in the first rotary direction.

43. The pill dispenser of claim 42, wherein the cover includes at top wall and a rim depending from a perimeter of the top wall, the rim is formed to include a cutaway gap, the lock tab extends downwardly from the perimeter of the top wall and lies in registry with the cutaway gap, the releasing means includes a tab mover located in the cutaway gap and coupled to the top wall and to the lock tab to place the lock tab between the axis of rotation and the tab mover, and wherein the tab mover is hinged to the top wall to be moved relative to the rim and toward the axis of rotation to move the lock tab portion to align with the tab passage space.

44. A pill dispenser comprising
a base formed to include a series of pill-receiving compartments and
a closure including a cover arranged to overlie the pill-receiving
compartments and formed to include a compartment access opening and a pair of
cover retainers coupled to the cover to mate with the base to support the cover on the
base for rotation about an axis of rotation, wherein each of the cover retainers
includes a retainer leg and a retainer flange, each retainer leg is cantilevered to an
underside of the cover and arranged to extend downwardly and generally along the
axis of rotation through a central retainer aperture formed in the base and surrounded
by the pill-receiving compartments, and each retainer flange is appended to a free end
of a companion retainer leg to extend laterally away from the companion retainer leg
to engage and ride on a retention flange provided on a bottom portion of the base.

45. The pill dispenser of claim 44, wherein the retainer legs are made of a spring material and arranged normally to lie in splayed relation to one another to diverge as the retainer legs extend in a downward direction away from the cover, and wherein each retainer leg further includes a grip portion at a distal end

5 thereof that is arranged to lie outside of the central retainer aperture formed in the base when the cover is mounted for rotation on the base, and the grip portions cooperate to form means for disengaging the retainer flanges from the retention flange upon movement of the retention legs toward one another so that the cover can be separated from the base upon removal of the pair of cover retainers from the central

10 retainer axis formed in the base.